

U. S. DEPARTMENT OF AGRICULTURE.

REPORT
OF
THE POMOLOGIST
FOR
1897.

BY
G. B. BRACKETT.

[FROM THE REPORT OF THE SECRETARY OF AGRICULTURE.]



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REPORT OF THE POMOLOGIST.

U. S. DEPARTMENT OF AGRICULTURE,
DIVISION OF POMOLOGY,
Washington, D. C., August 28, 1897.

SIR: I have the honor to submit herewith a report of the operations of the Division of Pomology for the year ending June 30, 1897, together with an outline of work for the current year and estimates for the ensuing year. Owing to the fact that my appointment as Pomologist took effect after the close of the fiscal year, that portion of the report covering the past year's work was prepared at my request by the Assistant Pomologist, Mr. W. A. Taylor.

Very respectfully,

G. B. BRACKETT, *Pomologist.*

Hon. JAMES WILSON, *Secretary.*

WORK OF THE YEAR.

The regular office work of the division has varied little from that of former years. It has consisted largely of correspondence with fruit growers, nurserymen, and others on matters relating to the adaptability of varieties to various portions of the country; methods of propagating, planting, pruning, and cultivating fruit trees and plants and of marketing the products thereof, together with answering such miscellaneous inquiries relating to the fruit industry in this and foreign countries as are received from time to time.

The disposition of this correspondence with the force of the division as now constituted consumes a large portion of the available working time of the Pomologist or his assistant, and encroaches upon the work of original investigation which it is desirable and highly important to pursue.

It is believed, however, that much benefit to the fruit-growing interests of the country results from the interchange of experience that grows out of such correspondence and that provision for its continuance and development without encroaching upon the more important work of original investigation should be provided.

EXAMINATION AND IDENTIFICATION OF SPECIMENS.

The receipts of specimen fruits of old varieties for identification and of seedlings for examination with a view to determining their probable value in comparison with varieties already named and disseminated has been large, though somewhat smaller than during the preceding year.

As a result of the investigation of specimen fruits received, more than 550 descriptions have been added to the files, while 175 water-

color paintings and about 200 wax models have been added to the already large collection. More than 100 photographic negatives comprising specimen fruits, methods of propagation, typical trees, and orchard scenes have been made during the year.

DISTRIBUTION OF TREES, SCIONS, CUTTINGS, PLANTS, AND SEEDS.

About 750 lots of trees, scions, cuttings, plants, and seeds of fruit-bearing varieties and species have been sent to experimenters during the year. A total of nearly 250 choice varieties, representing 25 species, have been distributed in this way.

FIGS.

In order that their adaptability to cultivation in the warmer portions of the country may be determined, collections of fig cuttings containing from 50 to 68 varieties each, derived from the scions and cuttings obtained from the Royal Horticultural Society of England in 1894, were placed at the experiment stations in Alabama, California, Florida, Georgia, Louisiana, Mississippi, North Carolina, and Texas, and with private experimenters in Illinois and Utah. Smaller collections were placed with a number of individual experimenters, mostly in the Gulf States. It is intended that these experiment-station collections shall be maintained in their entirety for a sufficient time to give the varieties a thorough test and that they shall be sources from which authentic stock of the more valuable varieties may be obtained in future by growers in the several regions.

CITRON.

Small trees of the variety of citron designated as "Corsican," derived from cuttings secured at Ajaccio, Corsica, in 1894, as the result of an investigation by a representative of this Department, were placed with more than 100 growers of citrus fruits, mainly in Florida and California. As a few trees derived from the same importation are bearing fruit this season, it is hoped that the value of the variety for planting in this country will soon be determined. It is believed to be the best type of that fruit known to commerce, and that its successful introduction here will lead to a considerable production of the article now largely imported from Europe, either as preserved citron or as citron in brine for preserving in this country.

CHINESE PERSIMMON.

About 350 seedling trees of Chinese persimmon, grown from seeds obtained through the United States minister at Peking in 1895, were distributed in small lots to experimenters in the sections where the native persimmon is found, and, for the purpose of testing hardiness and adaptability, to a few localities elsewhere.

As noted in the report of the Pomologist for 1895, the fruits from which these seeds were taken are reported to have been of large size, 8 to 12 inches in circumference, and of superior quality. The few seedling trees of this lot which were planted upon the Department grounds in Washington have endured the past two winters without injury. They are apparently quite distinct in their wood and leaf characters from the type of this fruit imported some years ago from Japan and now considerably grown in the subtropical portions of the United States.

COMPARISON OF METHODS OF ROOT GRAFTING.

The nursery period of the first comparative test of methods of root grafting the apple was completed during the year. In this test scions of each of 25 varieties of apple received from Hungary in the spring of 1895 were used. These were root grafted upon apple seedlings by three methods, designated as "whole root," "top cut" and "bottom cut," and planted in consecutive order, by varieties, in a plot of ground where they could be given ordinary nursery treatment for two years. At the end of this time the trees were taken up with special care to insure the preservation of all the larger and more important roots. They were then carefully graded and counted to determine the relative percentages of marketable and unmarketable trees, as estimated by nurserymen. At the same time photographs were made to record observed differences in size and habit of root growth, due to the different methods of propagation. A full account of the experiment will be found in the forthcoming report of the Pomologist for 1896.

In accordance with the plan outlined in the report for 1895 the trees resulting from this experiment were divided into sets, each containing a number of varieties of trees propagated by each of the three methods. As far as possible the trees of each set were of uniform grade and size. These sets were placed at experiment stations for planting in orchard where they can be under the care of skilled observers with a view to determine the relative vigor and durability of the trees resulting from the different methods.

Such sets of varieties were placed at the experiment stations of Alabama, Arkansas, California, Colorado, Connecticut, Idaho, Indiana, Maine, Massachusetts, Maryland, Missouri, Nebraska, Nevada, Oregon, Pennsylvania, South Dakota, Tennessee, West Virginia, and Wisconsin. The horticulturists of these stations have agreed to cooperate in the experiment. At the same time the value of the varieties represented in the collection, all of which are supposed to be new to this country, will be determined by these experimenters.

The remainder of the trees resulting from the test were placed with private experimenters in different States, a careful record of the grade and method of propagation of each tree sent out being made and marked upon the label for the information of the planter.

APPLE VARIETIES FROM NEW ZEALAND.

In June, 1897, scions of 18 varieties of apples of New Zealand and Australian origin were received through the kindness of Mr. John C. Blackmore, pomologist of the department of agriculture of New Zealand. As not more than one or two of these were known to have been fruited in this country it was decided that they should be given a wide distribution. Though they were received after apple trees were in full leaf in all parts of the country they were successfully budded and grafted by a number of growers who received them, and it is hoped that the entire collection will soon be brought into bearing in this country.

ROUGH LEMON SEEDS.

As the Bahia or Washington navel orange, which has been found to be unproductive when budded upon sweet seedling or sour orange stocks in Florida, is reported to be sufficiently productive when worked upon the "Florida rough" or "French" lemon, a small quantity of

seeds of the "rough lemon" of Jamaica, a closely allied form of citrus, which is highly prized in that island as a stock for orange trees, was secured and distributed to growers in the citrus districts for experimental planting and budding.

The seeds were obtained through the kindness of Mr. William Fawcett, director of the Government botanical gardens at Kingston, Jamaica.

DOWNING'S FRUITS AND FRUIT TREES OF AMERICA.

Through the generosity of Mr. J. R. Hawkins, of Mountainville, N. Y., the division library has received the copies of Downing's Fruits and Fruit Trees of America used by the late Charles Downing up to the time of his death. These volumes contain corrections and supplemental notes on varieties made by the author during the later years of his life. As many of them are based upon observations made subsequent to the last edition of the work they are of much value to the student of American fruits.

As relics possessing historical interest, Mr. Hawkins also presented to the division the budding knife and garden trowel long used by Mr. Downing.

EXHIBIT AT TENNESSEE CENTENNIAL EXPOSITION.

As a means of spreading information on varieties of fruit suited to cultivation in the South, the exhibit of this division at the Tennessee Centennial Exposition was devoted chiefly to collections of models, paintings, and descriptions of varieties known to succeed south of the Ohio and Potomac rivers.

A special exhibit calling attention to the pineapple industry in Florida consisted of bromide enlargements of photographic views of pineapple field and marketing scenes, surmounting a glass case in which were successively shown fruiting plants of different varieties of the pineapple shipped from Florida for that purpose.

ADDRESSES MADE AND PUBLICATIONS ISSUED.

Papers and addresses were delivered by the Pomologist or the Assistant Pomologist at meetings of horticultural societies or farmers' institutes in Delaware, Maryland, Pennsylvania, and Ohio. A bulletin on Fig Culture, containing articles on "Edible figs; their culture and curing," by Dr. Gustav Eisen, and "Fig culture in the Gulf States," by Frank S. Earle, was issued during the year. The annual report of the Pomologist for 1895 was published, and a reprint edition of 1,000 copies of the report on Nut Culture in the United States was issued.

CARD CATALOGUE OF FRUIT VARIETIES.

The work of preparing the descriptive catalogue of fruits described in the standard pomological works published in the United States has been proceeded with by Mr. T. T. Lyon, of Michigan, special agent of the division. The great usefulness of this as a reference catalogue has been evident by the use made of the completed portion of it during the preparation of the Revised Catalogue of Fruits of the American Pomological Society, which is now in the hands of the printer, to be issued as a bulletin of this division.

OUTLINE OF CURRENT WORK.

In addition to the current work, an effort is being made to considerably enlarge the varietal herbarium of the division, which, when properly installed, will constitute an important adjunct in the work of identification and classification of varieties.

The nursery period of a second comparative test of the three methods of root-grafting, already alluded to, will be concluded. In this test standard varieties of American origin are used.

Renewed efforts to secure authentic stock of "Jordan" almond will be made.

It is intended that a beginning shall be made in the mapping of fruit districts, as outlined in the report for 1895.

No provision has yet been made for furnishing the State experiment stations with duplicate models of fruits in the manner recommended in the report of last year.

Certain lines of field investigation, which are of fundamental importance to American pomology, can not at present be taken up for lack of the appropriations necessary to prosecute them to a definite conclusion.

PLANS FOR THE ENSUING YEAR.

Besides carrying forward the investigations already under way and recommended, it is desirable that a systematic effort be made to introduce a large number of species of trees and plants from foreign countries which have not heretofore reached the United States.

A hasty preliminary examination reveals at least seventy species which are valued for their fruits in the countries where they are indigenous, covering a wide range of climatic conditions outside the tropics, and therefore worthy of introduction in the United States. In addition to these there are many allied species not valued for their fruit which are so closely allied to those already grown here as to warrant a thorough test of them as stocks. This should be done with a view to discovering some that will be suitable to propagate our choice improved varieties upon, many of which lack sufficient vigor or resistance to the somewhat unfavorable conditions of soil and vicissitudes of climate which exist in portions of the United States otherwise adapted to fruit production.

In order that the work already under way may be carried forward to completion and the proposed new work be taken up I would respectfully recommend that the estimates submitted for the ensuing fiscal year include the transfer of two clerks, at \$1,400 per year each, now on the fund for pomological investigation, to the statutory roll of the division.

